EASYCUB

Baukasten / kit # **21 4235**

MULTIPLEX®

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Version 1.0

(D) Sicherheitshinweise

Prüfen Sie vor jedem Start den festen Sitz des Motors und der Luftschraube - insbesondere nach dem Transport, härteren Landungen sowie Abstürzen. Prüfen Sie ebenfalls vor jedem Start den festen Sitz und die richtige Position der Tragflächen auf dem Rumpf.

Akku erst einstecken, wenn Ihr Sender eingeschaltet ist und Sie sicher sind, daß das Bedienelement für die Motorsteuerung auf "AUS" steht.

Im startbereiten Zustand nicht in den Bereich der Luftschraube greifen.
Vorsicht in der Luftschraubendrehebene - auch Zuschauer zur Seite bitten!

Zwischen den Flügen die Motortemperatur durch vorsichtige Fingerprobe prüfen und
vor einem Neustart den Motor ausreichend abkühlen lassen. Die Temperatur ist richtig, wenn Sie den Motor problemlos berühren können. Insbesondere bei hohen Außentemperaturen kann dieses bis zu 15 Minuten dauern.

Denken Sie immer daran: Niemals auf Personen und Tiere zufliegen.

(F) Conseils de sécurité

Avant chaque décollage, vérifiez la fixation du moteur et de l'hélice, notamment après le transport, après les atterrissages violents et après un “Crash”. Vérifiez également, avant chaque décollage la fixation ainsi que le positionnement de l’aile par rapport au fuselage.

Ne branchez l’accu de propulsion que si vous êtes sûr que votre émetteur est allumé et que l’élément de commande moteur est en position “ARRET”.

Ne mettez pas vos doigts dans l’hélice! Attention à la mise en marche, demandez également aux spectateurs de reculer.

Entre deux vols, vérifiez en posant un doigt dessus, la température du moteur, laissezle refroidir suffisamment avant le prochain décollage. La température est correcte si vous pouvez maintenir votre doigt ou votre main sur le moteur. Le temps de refroidissement peut varier jusqu’à 15 minutes s’il fait particulièrement chaud.

Pensez-y toujours: ne volez jamais vers ou au-dessus des personnes ou des animaux.

(GB) Safety notes

Before every flight check that the motor and propeller are in place and secure - especially after transporting the model, and after hard landings and crashes. Check also that the wing is correctly located and firmly secured on the fuselage before each flight.

Don’t plug in the battery until you have switched on the transmitter, and you are sure that the motor control on the transmitter is set to “OFF”.

When the model is switched on, ready to fly, take care not to touch the propeller. Keep well clear of the propeller disc too, and ask spectators to stay back.

Allow the motor to cool down after each flight. You can check this by carefully touching the motor case with your finger. The temperature is correct when you can hold your finger on the case without any problem. On hot days this may take up to 15 minutes.

Please keep in mind at all times: don’t fly towards people or animals.

(I) Note di sicurezza

Prima di ogni decollo controllare che il motore e la eliche siano fissati stabilmente - specialmente dopo il trasporto, atterraggi duri e se il modello è precipitato. Controllare prima del decollo anche il fissaggio e la posizione corretta delle ali sulla fusoliera.

Collegare la batteria solo quando la radio è inserita ed il comando del motore è sicuramente in posizione ”SPENTO”.

Prima del decollo non avvicinarsi al campo di rotazione della eliche. Attenzione alla eliche in movimento - pregare che eventuali spettatori si portino alla dovuta distanza di sicurezza!

Tra un volo e l’altro controllare cautamente con le dita la temperatura del motore e farli raffreddare sufficientemente prima di ogni nuovo decollo. La temperatura è giusta se si possono toccare senza problemi. Specialmente con una temperatura esterna alta questo può durare fino a 15 minuti.

Fare attenzione: Non volare mai nella direzione di persone ed animali.

(E) Advertencias de seguridad

Compruebe antes de cada despegue que el motor y la hélice estén fuertemente sujetados, sobretodo después de haberlo transportado, de aterrizajes más fuertes así como después de una caída. Compruebe igualmente antes de cada despegue que las alas estén bien sujetas y bien colocadas en el fuselaje.

Conectar la batería, cuando la emisora esté encendida y Usted esté seguro que el elemento de mando para el motor esté en ”OFF”.

No meter la mano en la zona inmediata a la hélice cuando el avión esté a punto de despegar. ¡Cuidado con la zona de la hélice! ¡Pedir a los espectadores que se aparten!

Entre los vuelos hay que comprobar cuidadosamente la temperatura del motor con el dedo y dejar que el motor se enfríe antes de volver a despegar. La temperatura es correcta, si puede tocar el motor sin problemas. Sobretodo en el caso de temperaturas del ambiente muy altas, esto puede tardar unos 15 minutos.

Recuerde: No volar nunca hacía personas o animales.

Examine your kit carefully!
MULTIPLEX model kits are subject to constant quality checks throughout the production process, and we sincerely hope that you are completely satisfied with the contents of your kit. However, we do ask you to check all the parts (referring to the Parts List) **before** you start construction, as **we cannot exchange components which you have already modified**. If you find any part is not acceptable, we will readily correct or exchange it once we have examined it. Just send the component to our Model Department; please be **sure** to include the purchase receipt and a brief description of the fault.
We are constantly working on improving our models, and for this reason we must reserve the right to change the kit contents in terms of shape or dimensions of parts, technology, materials and fittings, without prior notification. Please understand that we cannot entertain claims against us if the kit contents do not agree in every respect with the instructions and the illustrations.

Caution!
Radio-controlled models, and especially model aircraft, are by no means playthings. Building and operating them safely requires a certain level of technical competence and manual skill, together with discipline and a responsible attitude at the flying field. Errors and carelessness in building and flying the model can result in serious personal injury and damage to property. Since we, as manufacturers, have no control over the construction, maintenance and operation of our products, we are obliged to take this opportunity to point out these hazards and to emphasise your personal responsibility.

Additional items required for the EasyCub:

Airborne radio control components:

MULTIPLEX *RX-7-Synth IPD* receiver	35 MHz A band	Order No. **5 5880**
alternatively:	40 / 41 MHz band	Order No. **5 5882**
or MULTIPLEX *RX-6-Synth light*	35 MHz A / B-band	Order No. **5 5876**
2 x MULTIPLEX *Tiny S servo*	elevator, rudder	Order No. **6 5121**
or 2 x MULTIPLEX *Tiny MG servo*	elevator, rudder	Order No. **6 5122**

Power set:
MULTIPLEX *EasyCub power set* Order No. **33 2637**
Motor: Himax C 2816-1220; speed controller: BL 27 II; 10 x 5” propeller, propeller driver

Flight battery:
MULTIPLEX Li-Batt eco 2/1-2000 flight battery Order No. **15 7230**
or MULTIPLEX Li-Batt BX 2/1-2100 flight battery Order No. **15 7130**

Tools:
Scissors, balsa knife, combination pliers, screwdriver.

Specification:

Wingspan:	1400 mm
Fuselage length:	980 mm
All-up weight with Li-Batt BX 2/1-2100 approx.:	850 g
Wing area:	36.5 dm²
Wing loading (FAI) approx.:	23 g/dm²
RC functions:	Rudder, elevator, throttle

Note: please remove the illustration pages from the centre of the instructions.

Important note
This model is not made of styrofoam™, and it is not possible to glue the material using white glue, polyurethane or epoxy; these adhesives only produce a superficial bond which simply gives way when stressed. Please use medium-viscosity cyano-acrylate glue exclusively, preferably our Zacki-ELAPOR®, # 59 2727 - the cyano glue optimised specifically for ELAPOR® particle foam.
If you use Zacki-ELAPOR® you will find that you do not need cyano kicker or activator for most joints. However, if you wish to use a different adhesive, and are therefore obliged to use kicker / activator spray, we recommend that you apply the material in the open air to avoid health problems.
Please take care when working with any type of cyano-acrylate (“cyano”, “CA”) adhesive, as they can cure in seconds. Don’t allow the glue to contact your fingers or any other part of your body. Always wear goggles to protect your eyes!
Keep out of the reach of children!

1. Before assembling the model
Please check the contents of your kit before you start working on it.
You will find **Figs. 1 + 2** and the Parts List helpful here.

2. The fuselage
The first step is to glue the canopy latches **22** and the motor mounts **37** to both fuselage shells.
Fig. 3

3. Installing the servos
Trial-fit the "rudder" and "elevator" servos in the fuselage shells **3 + 4**, and secure them with a drop of glue at each mounting lug. Fix the servo leads in place with paper masking tape so that the leads and plugs cannot cause damage, and do not get in the way when the fuselage shells are joined subsequently.
Fig. 4

4. Control snakes
Prepare the snakes **54 / 56 and 55 / 57** as follows: cut the outer and inner sleeves to length if necessary, and slip the steel pushrods **52 / 53** into them. Connect the pre-formed end of the pushrods to the servos, position the snakes carefully and glue them to the fuselage. Note that the pre-formed pushrod ends should be connected to the innermost holes in the servo output levers. Lay the fuselage shells down flat when gluing the snakes in place, otherwise there is a chance of distorting the fuselage.
Figs. 4 - 6

5. Preparing the wing screw supports
Snap the wing screw support components **33 + 34** together and glue the joints; use a pair of flat-nose pliers to join them if necessary. Glue the prepared wing screw supports in the right-hand fuselage shell as shown.
Fig. 7

6. Joining the fuselage shells
Join the fuselage shells **3 / 4** "dry" (without glue) initially, and check that everything fits properly before gluing the shells together permanently. Check that the fuselage is perfectly straight before allowing the glue to set hard.
Fig. 7

7. Preparing the pushrod connector
Fit the swivel pushrod connector **25** for the elevator **8** in the outer hole in the elevator horn **24**, and secure it with the washer **26** and the nut **27**. **Caution:** be sure to fit the connector on the correct side of the horn (see illustration). Tighten the nut carefully: the pushrod connector must swivel smoothly, but without undue slop. Apply a tiny drop of cyano or paint to the threads (on the point of a pin) to prevent the nut working loose. Fit the socket-head grubscrew **28** on the allen key **29**, and use it to fit the screw loosely in the pushrod connector **25**. Glue the horn **24** in the elevator **8** with the row of holes facing forward.
Fig. 8

8. Gluing the tailplane to the fuselage
Place the tailplane on the fuselage and check that it can be positioned and aligned correctly; carry out any minor trimming required. Glue the tailplane to the fuselage and hold it in position while the adhesive hardens.
Fig. 9

9. Fin and tailwheel
Fit the wire tailwheel unit **76** through the glue-fitting tailwheel bush **36**, then through the glue-fitting rudder horn **35**. Bend the end over at 90° as close to part **35** as possible, as shown in **Fig. 10**.

Glue the rudder horn **35** in the rudder, but apply cyano to the underside only. Allow the glue to set hard, then cut a slot about 1.5 mm deep for the tailwheel unit above the horn.
Wipe away excess adhesive if necessary. Position the wire tailwheel unit **76** over the horn **35**, align the parts and glue them together using plenty of cyano. Allow the glue to cure, then attach the swivel pushrod connector to the horn. Secure the retaining nut with a drop of paint or glue. **Fig. 11**

Fit the tailwheel **77** on the axle: first push one metal wheel retainer sleeve **78** on the wire, then the wheel, followed by the second retainer sleeve. Secure each sleeve **78** with a drop of cyano.
Fig. 12

10. Gluing the fin to the fuselage
Trial-fit the prepared fin in the slots in the fuselage and tailplane, and glue it in place.
Fig. 13

11. Main undercarriage
Prepare the main undercarriage **70** as follows:
Fit socket-head grubscrews **73** in the four wheel collets **72**, and secure the wheels **71** on the undercarriage by fitting a collet on each side of each wheel. Check that the wheels rotate freely, then tighten the grubscrews. **Fig. 15**

The plastic undercarriage bracket **74** can now be installed in the fuselage: first press it into position, then apply glue all round it. **Fig. 14**

Allow the undercarriage **70** to snap into position in the bracket, then fit the retainer screw **75** to secure it.
Fig. 15

12. The wings
The wing panels **6 / 7** should not be glued together!
Trial-fit the wing spars **50 / 51** and the spar holders **30 / 31** as shown in the illustration.

Note: the front spar holder **30** is taller than the rear holder **31**. When you are sure that everything fits properly, glue the spars **50 / 51** and the spar holders **30 / 31** in the right-hand wing panel **only. Fig. 16**

Now insert the second pair of spars in the free end of the spar holders (do not use glue!). Slide the left wing onto the spars and holders and check that they fit correctly. Apply glue to the spar channel in the left wing and position it accurately on the spars. **Fig. 17**

If you have done everything correctly, you will now be able to part the wing panels in the centre once the glue has set hard.

13. Trial assembly
The wings are held on the fuselage using the plastic screws **32**. The locating blocks moulded into the underside of the wing prevents the wing slipping off the fuselage or out of position.
Fig. 18

14. Power set:
The model is designed to be fitted with the MULTIPLEX

EasyCub Power Set, Order No. **33 2637**.

The set consists of a Himax C 2816-1220 motor, a BL 27/II speed controller, a 10 x 5" propeller and a propeller driver.

15. Attaching the motor bulkhead to the motor mount
The motor sidethrust and downthrust can be adjusted using the motor mounts **37** and the motor bulkhead **38**. Fitting the four adjustor screws **39** flush installs the mount asymmetrically, giving maximum sidethrust and no downthrust. The basic position for the EasyCub is set as follows (note that we are looking at the rear (!) of the motor bulkhead). **Fig. 20**

Upper left adjustor screw	1 mm = approx. two turns
Upper right adjustor screw	1 mm = approx. two turns
Lower left adjustor screw	1 mm = approx. two turns
Lower right adjustor screw	1 mm = approx. two turns

The screws should project by the values stated above. The settings may require fine-tuning during the test-flying programme.

16. Installing the motor
Attach the motor to the motor bulkhead **38** using the retaining screws included in the power set. Install the motor as shown in **Fig. 19**.

17. Installing the canopy latch tongues
The canopy **5** is first slid into the fuselage towards the wing, and only then folded down at the front. Temporarily insert the two latch tongues **23** in the canopy, and position them as shown in the illustration. Apply high-viscosity (thick) cyano to the textured surfaces, then fit the latch tongues into the slots in the canopy. Place the canopy on the fuselage, and allow the latch tongues to engage in the latches **22**. Check immediately that the canopy is correctly aligned with the fuselage. Wait for about one minute, then carefully open the canopy again. If necessary, apply more glue to the latch tongues to reinforce the joints.
Fig. 21

18. Installing the flight battery and receiver
The space for the flight battery is under the canopy, extending back under the wing saddle. The battery is held in place using the Velcro tape **20 / 21**.
The speed controller fits on the fuselage side on one side of the battery. The receiver should be installed below the wing saddle, again using the Velcro tape **20 / 21.**
Fig. 22

If the controller is connected to the motor, do not connect the battery to the speed controller without first switching the transmitter on and ensuring that the throttle control is at the "OFF" position.

Connect the servo leads to the receiver. Switch the transmitter on, connect the flight battery (installed in the model) to the speed controller, and connect the speed controller to the receiver.
Now switch the motor on briefly by advancing the throttle stick, and check that the propeller spins in the correct direction. When test-running the motor be sure to hold the model securely, and remove all loose, light objects before and behind the model before the propeller does the job for you. If the motor rotates in the wrong direction, swap over any two of the motor connections - never swap over the battery connections.

Caution: there is a serious risk of injury in the area around the propeller!

19. Deploying the aerial on the underside of the fuselage
The wire receiver aerial should be routed through a hole in the underside of the fuselage and deployed towards the tail.
You will need to pierce a hole in the fuselage from the outside before threading the aerial through it from the inside. Tape the aerial to the fuselage. If the aerial is longer than the fuselage, simply allow the excess length to trail freely.

20. Setting the control surface travels
The control surface travels must be set correctly in order to obtain a balanced control response from the model.

Elevator travels:

up (stick back towards you)	**15 mm**
down (stick away from you)	**12 mm**

Rudder travel to **left** and **right**: **15 mm each way**
Note that the stated travels are measured at the widest point of the control surface.

21. Gilding the lily - applying the decals
The kit is supplied with a multi-colour decal sheet **2**. Cut out the individual name placards and emblems and apply them to the model in the position shown in the kit box illustration, or in an arrangement which you find pleasing. The decals cannot be re-positioned once applied, so place them carefully!

22. Balancing
Like any other aircraft, the EasyCub must be balanced at a particular point in order to achieve stable flying characteristics. Assemble your model ready to fly, and install the flight battery.

The Centre of Gravity (CG) should be at a position 80 mm aft of the root leading edge, i.e. at the fuselage sides. Mark this point on both sides of the fuselage.

Support the model at this position on two fingertips, and it should balance level. If not, you can move the flight battery forward or aft to correct the balance point. Once the correct position is found, mark the location of the flight pack inside the model to ensure that it is always replaced in the same position. The CG location is not critical - 10 mm forward or aft of the stated position presents no problems.
Fig. 23

23. Preparing for the first flight
For the first flight wait for a day with as little breeze as possible. The early evening is often a good time.

Be sure to carry out a range check before the first flight!

Just before the flight, charge up the transmitter battery and the flight pack using the recommended procedures. Ensure that "your" channel is not already in use before you switch on the transmitter.
Ask your assistant to walk away from the model, holding the transmitter. The transmitter aerial should be fitted but completely collapsed.
Your assistant should operate one of the functions constantly

while you watch the servos. The non-controlled servo should stay motionless up to a range of about 60 m, while the controlled one should follow the stick movements smoothly and without any delay. Please note that this check can only give reliable results if the radio band is clear of interference, and if no other radio control transmitters are in use - even on different channels. If the range check is successful, repeat it with the motor running. There should only be a very slight reduction in effective radio range with the motor turning.

If you are not sure about anything, please don't risk a flight. Send the whole system (including battery, switch harness and servos) to the Service Department of your RC system manufacturer and ask them to check it.

The first flight ...
The EasyCub should always be launched exactly into any wind.

If you are a beginner to model flying we strongly recommend that you ask an experienced model pilot to help you for the first few flights.

24. Taking off from a hard strip
If you have access to a hard landing strip, a ground take-off is the safest option.
Apply full up-elevator initially (to keep the tail down) and accelerate gradually, using the rudder to keep the model on a straight track.
Apply full-throttle to continue accelerating, gradually returning the elevator stick to neutral. The tail will now rise; when the model reaches flying speed apply gentle but deliberate up-elevator to lift off. Allow the aeroplane to climb at a steady, fairly shallow angle, taking care to keep the airspeed up!
From a closely mown grass strip a ground take-off works just like on a hard strip, but the ground-roll will be longer. If you do not have access to a runway of any kind, a hand-launch works fine.
Caution: if your assistant is an experienced hand-launcher then you can be confident of success; if not, watch out!

25. Hand-launching
Please don't try unpowered test-glides with this model - the result is invariably a damaged airframe. The EasyCub should always be hand-launched with the motor running at full-throttle, and always pointing directly into wind.
Ask an experienced modeller to hand-launch your aircraft for you: he should run forward for two or three paces, then give the machine a powerful straight launch, with the wings and fuselage level. Use the controls to hold the model in a steady, gentle climb - remember to keep the rate of ascent shallow and the airspeed high!
Allow the aeroplane to climb to a safe height, then adjust the trims on the transmitter until it flies in a perfectly straight line "hands off".

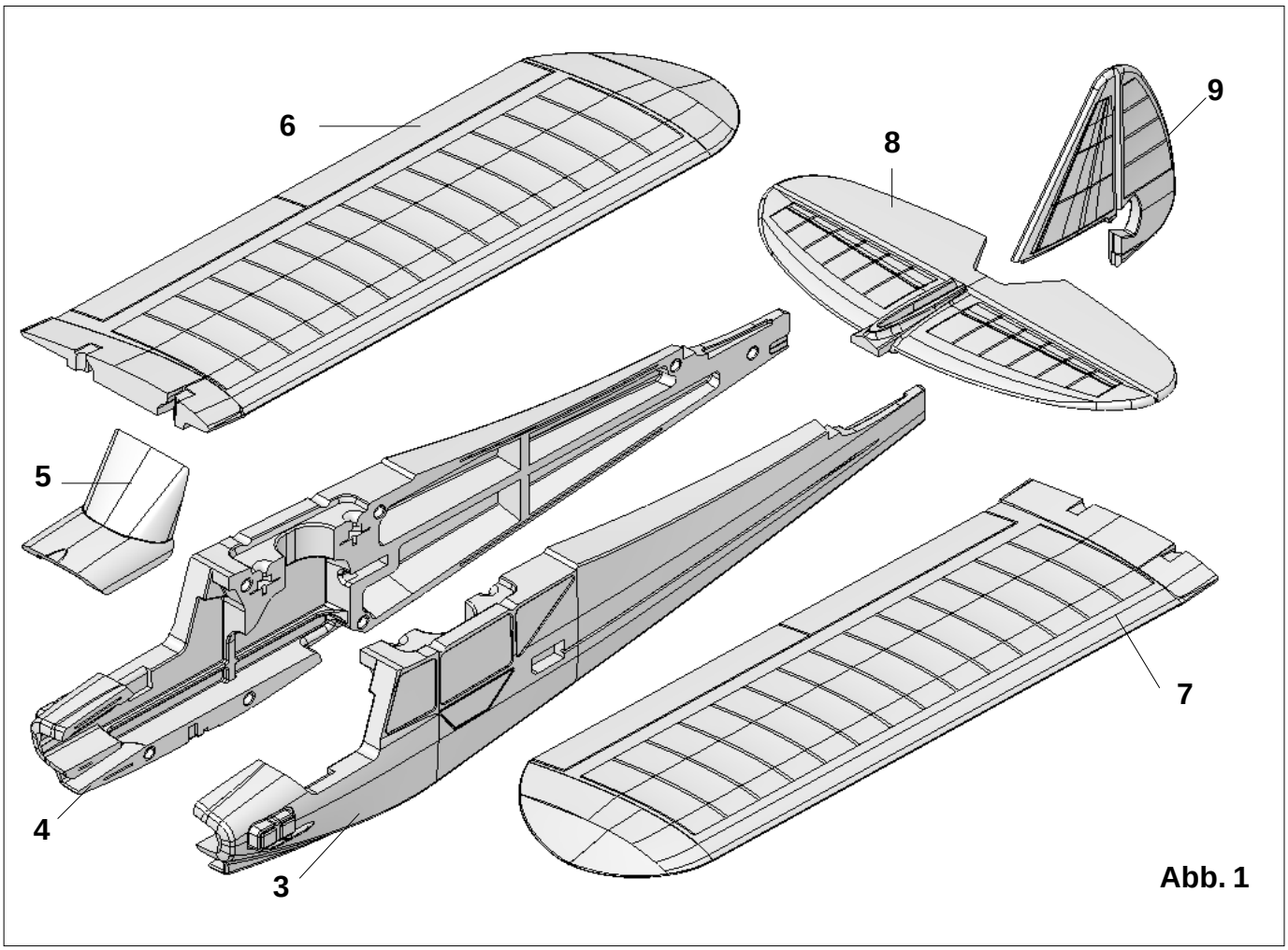
While the model is still at a safe altitude, throttle back and try out the controls on the glide. Carry out a "dry run" landing approach at a safe height so that you are prepared for the real landing when the battery runs flat.
Don't try any tight turns at first, and especially not on the landing approach at low altitude. It is always better to land safely at some distance from you, than to force the model back to your feet and risk a heavy landing.

26. Safety
Safety is the First Commandment when flying any model aircraft. Third party insurance should be considered a basic essential. If you join a model club suitable cover will usually be available through the organisation. It is your personal responsibility to ensure that your insurance is adequate.
Make it your job to keep your models and your radio control system in perfect order at all times. Check the correct charging procedure for the batteries you are using. Make use of all sensible safety systems and precautions which are advised for your system. An excellent source of practical accessories is the MULTIPLEX main catalogue, as our products are designed and manufactured exclusively by practising modellers for other practising modellers.
Always fly with a responsible attitude. You may think that flying low over other people's heads is proof of your piloting skill; others know better. The real expert does not need to prove himself in such childish ways. Let other pilots know that this is what you think too. Always fly in such a way that you do not endanger yourself or others. Bear in mind that even the best RC system in the world is subject to outside interference. No matter how many years of accident-free flying you have under your belt, you have no idea what will happen in the next minute.

We - the MULTIPLEX team - hope you have many hours of pleasure building and flying your new model.

MULTIPLEX Modellsport GmbH & Co. KG
Product development and maintenance

Klaus Michler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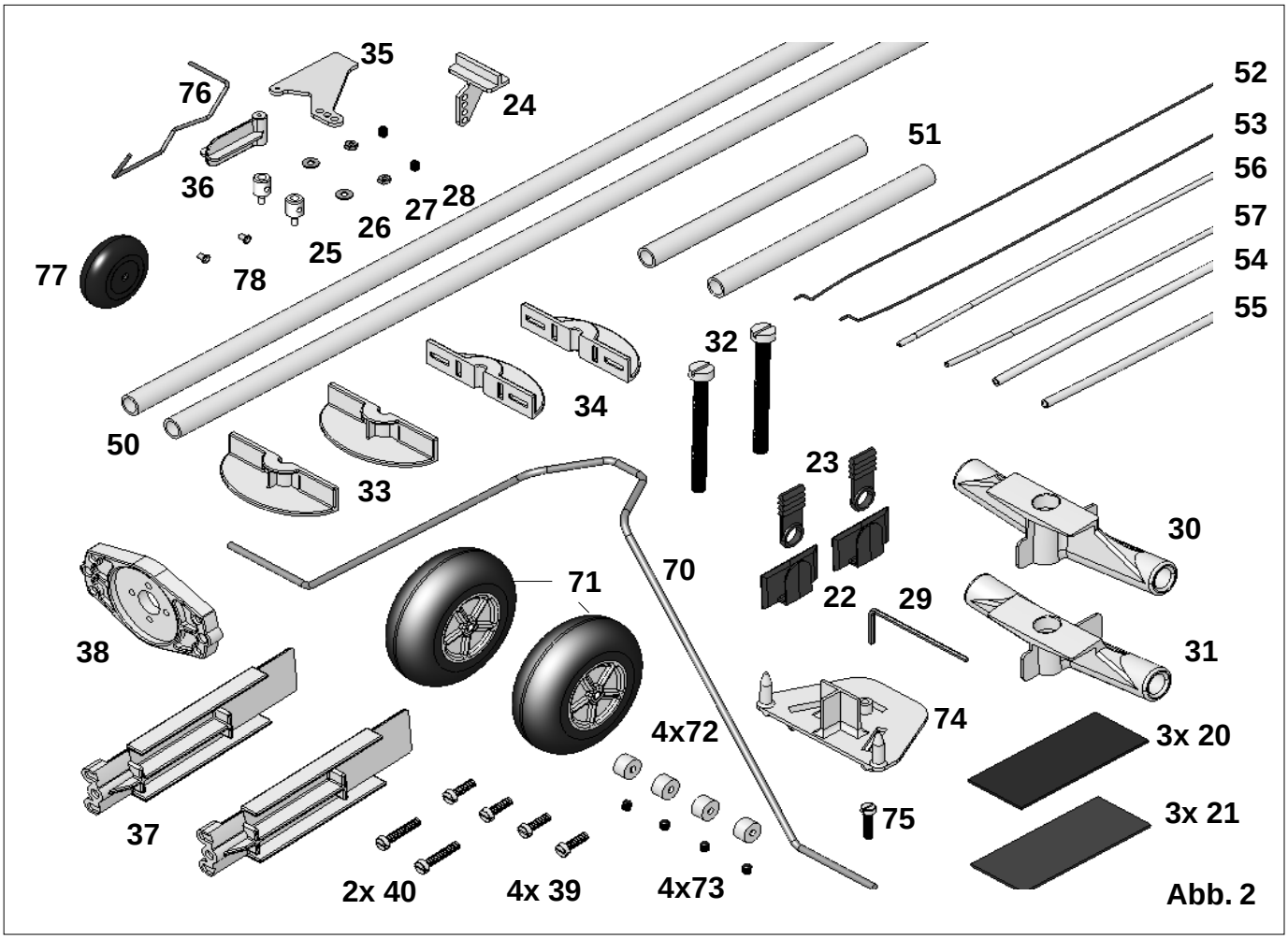
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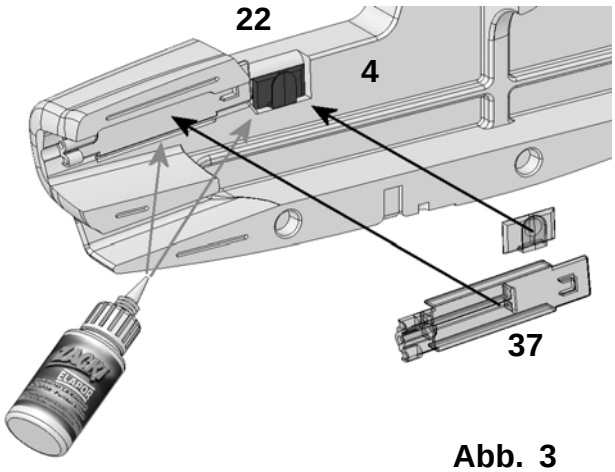

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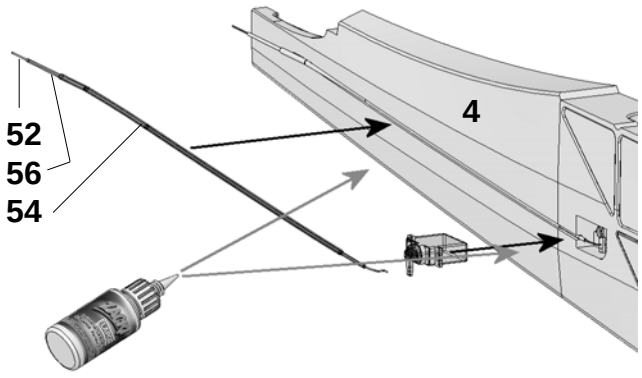

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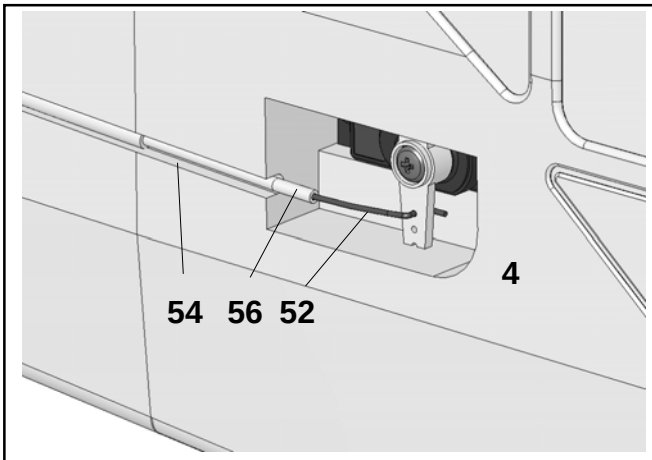

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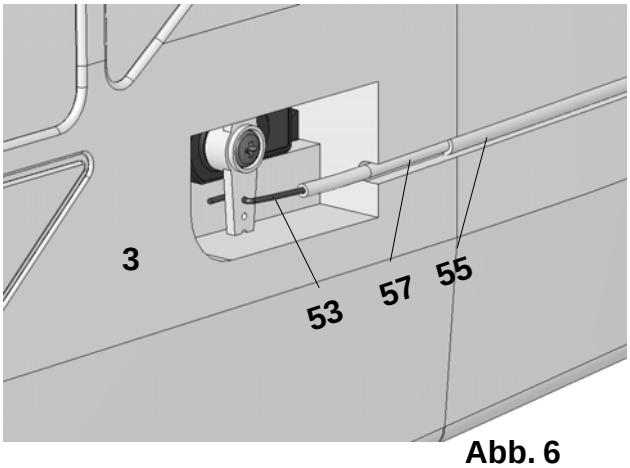

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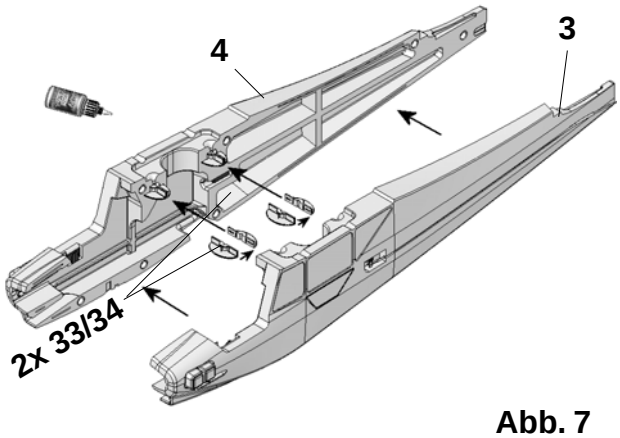

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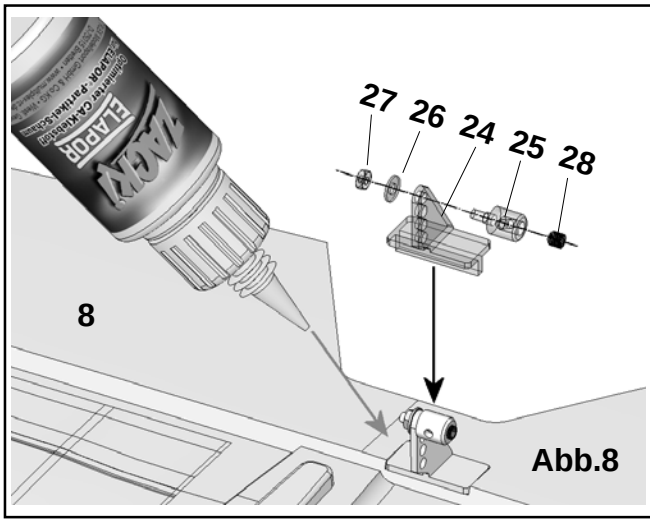

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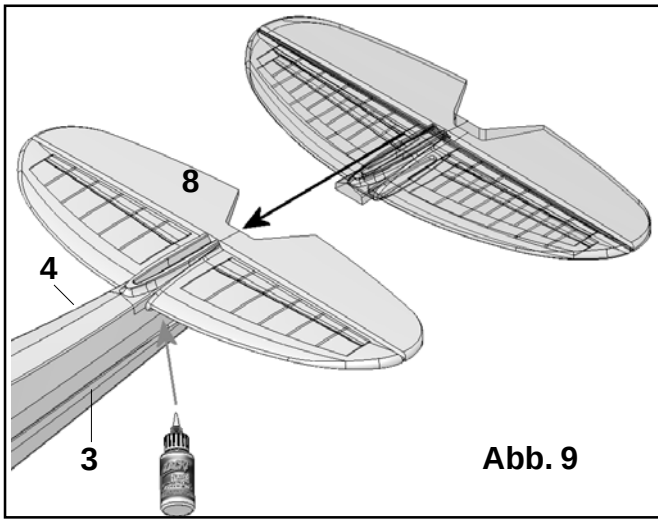

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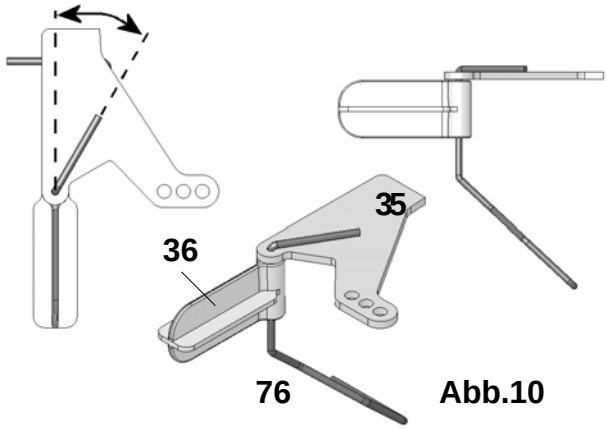

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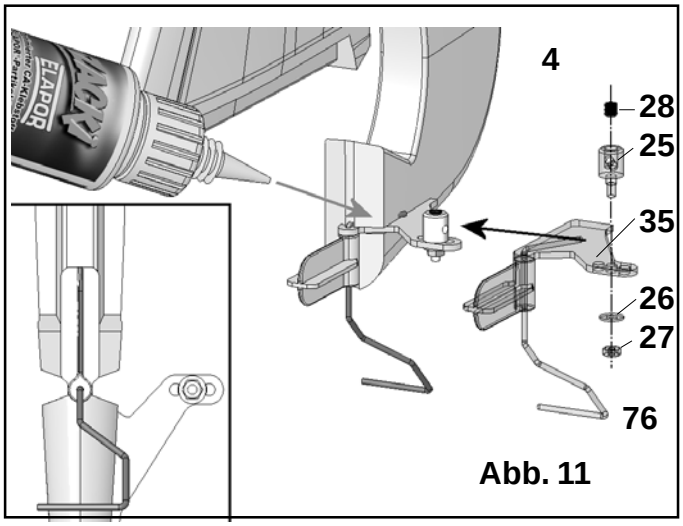

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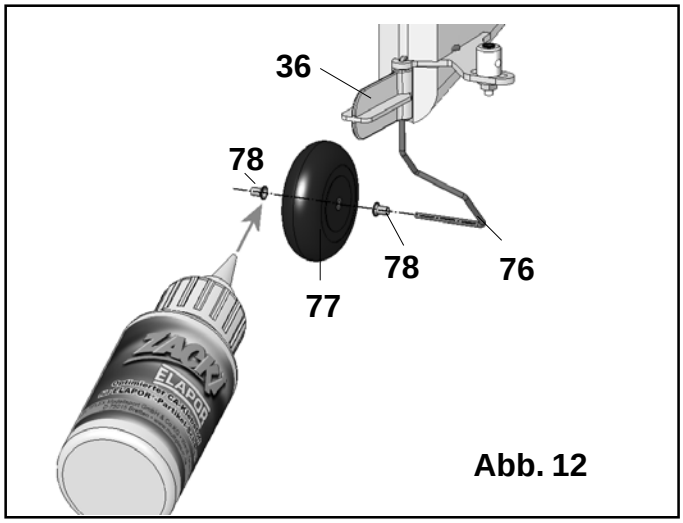

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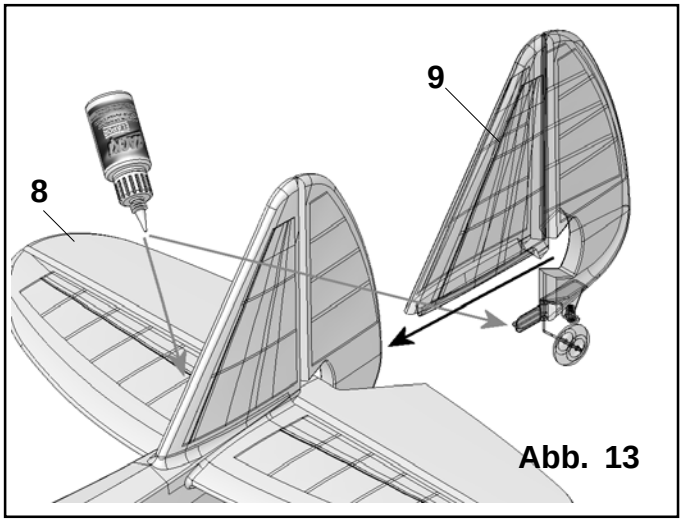

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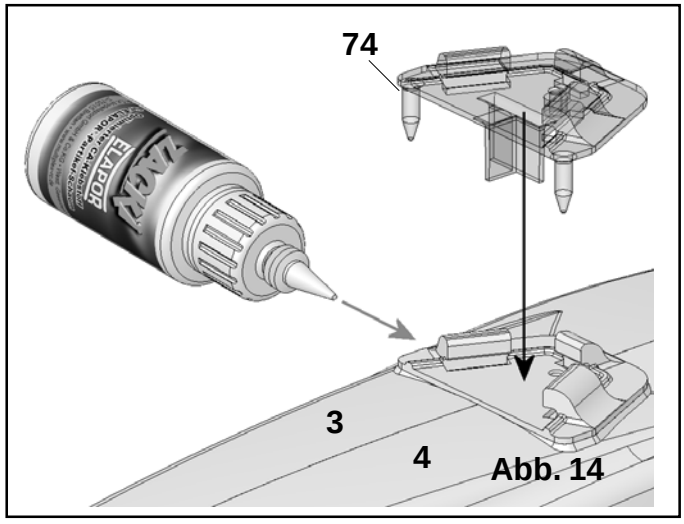

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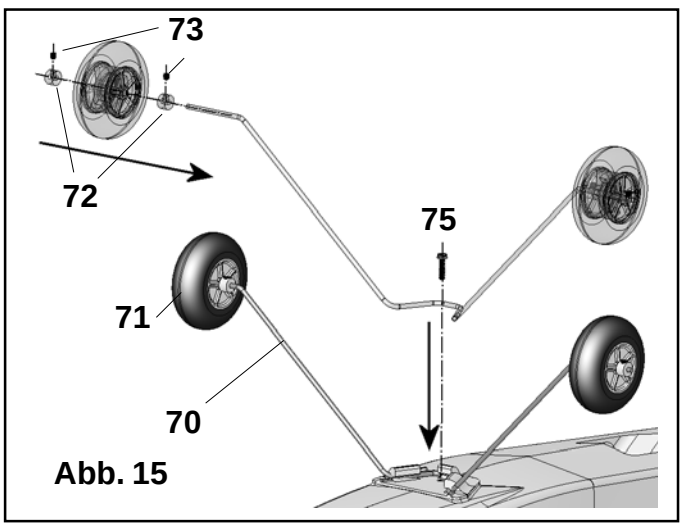

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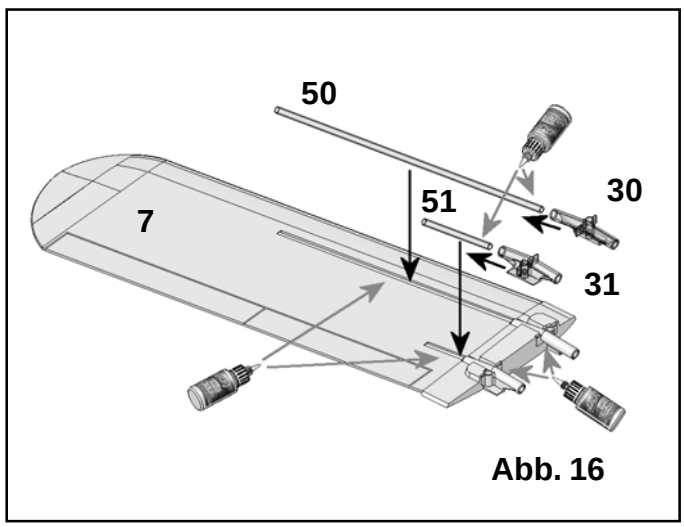

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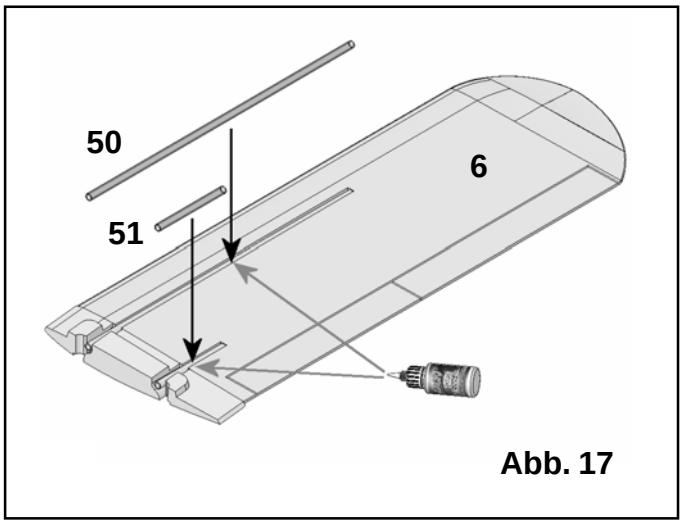

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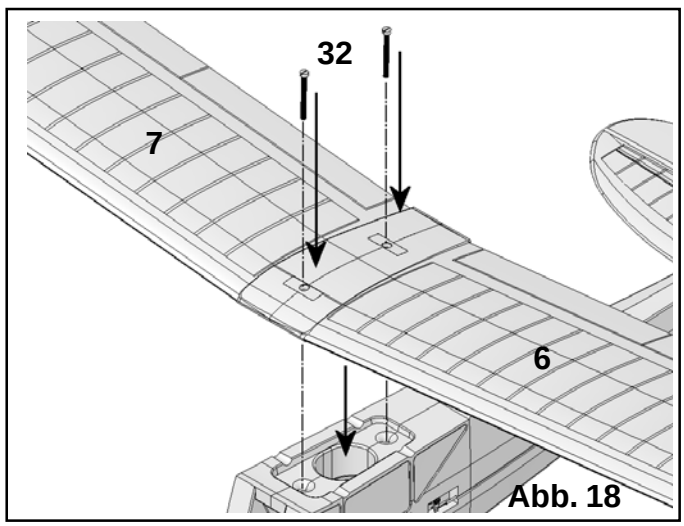

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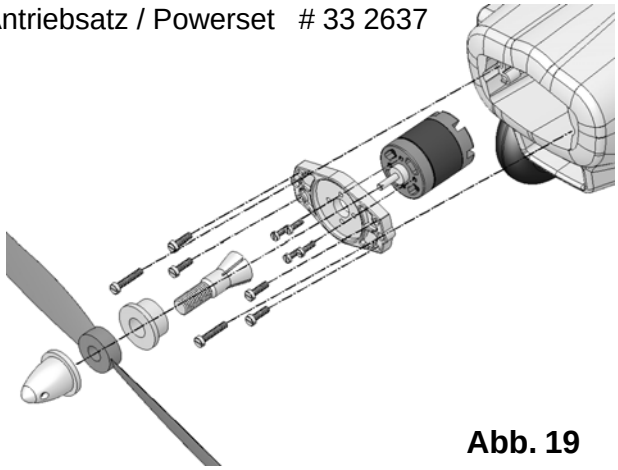
Antriebsatz / Powerset # 33 2637



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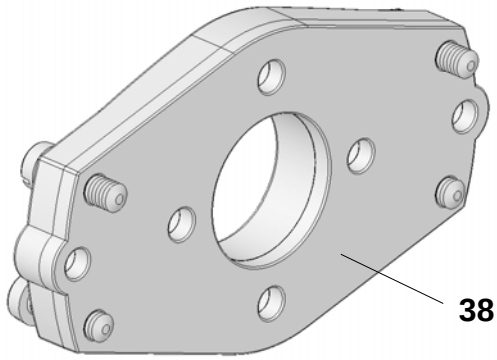

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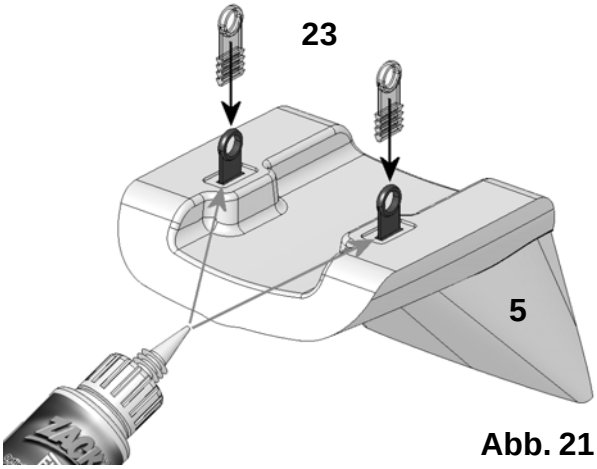

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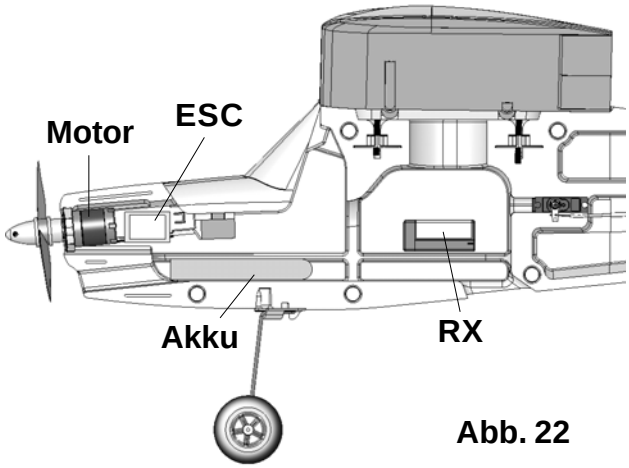

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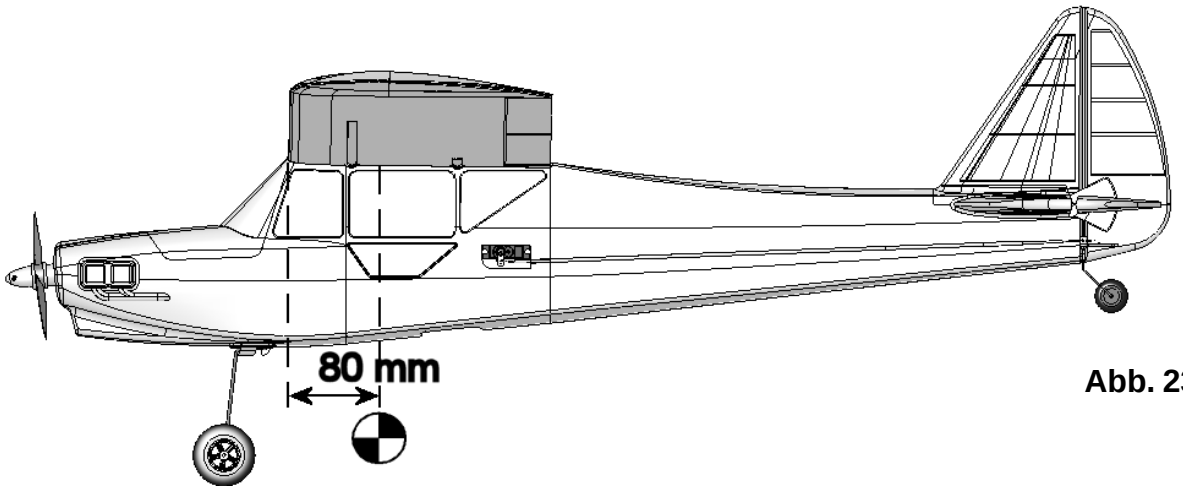


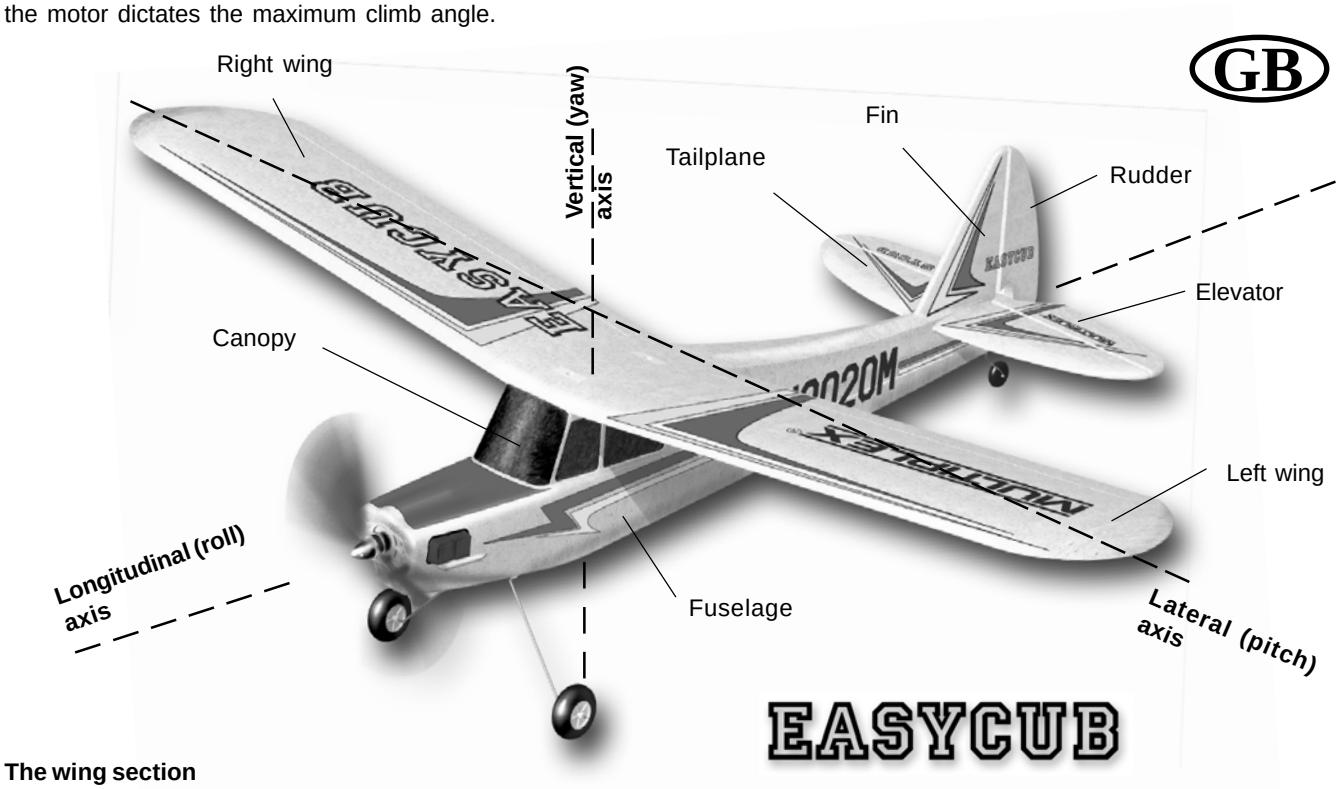
Abb. 23

EasyCub Parts List

Part No.	No. off	Description	Material	Dimensions
1	1	Building instructions	Paper, 80 g/m²	A4
2	1	Decal set	Printed adhesive film	500 x 700 mm
3	1	L.H. fuselage shell	Moulded Elapor foam	Ready made
4	1	R.H. fuselage shell	Moulded Elapor foam	Ready made
5	1	Canopy	Moulded Elapor foam	Ready made
6	1	L.H. wing panel	Moulded Elapor foam	Ready made
7	1	R.H. wing panel	Moulded Elapor foam	Ready made
8	1	Tailplane	Moulded Elapor foam	Ready made
9	1	Fin	Moulded Elapor foam	Ready made
70	1	Main undercarriage unit	Spring steel	2.5 mm Ø, ready made
Small items				
20	3	Velcro tape, “mushroom”	Plastic	25 x 60 mm
21	3	Velcro tape, “felt”	Plastic	25 x 60 mm
22	2	Canopy latch	Inj. moulded plastic	Ready made
23	2	Canopy latch tongue	Inj. moulded plastic	Ready made
24	1	Glue-fitting control surface horn	Inj. moulded plastic	Ready made
25	2	Swivel pushrod connector	Metal	Ready made, 6 mm Ø
26	2	Washer	Metal	M2
27	2	Nut	Metal	M2
28	2	Socket-head grubscrew	Metal	M3 x 3 mm
29	1	Allen key	Metal	1.5 mm A/F
30	1	Front spar holder, “tall”	Inj. moulded plastic	Ready made
31	1	Rear spar holder, “low”`	Inj. moulded plastic	Ready made
32	2	Screw	Inj. moulded plastic	M5 x 50 mm
33	2	Wing screw support, part A	Inj. moulded plastic	Ready made, M5
34	2	Wing screw support, part B	Inj. moulded plastic	Ready made, M5
35	1	Glue-fitting horn, tailskid	Inj. moulded plastic	Ready made
36	1	Glue-fitting tailskid bush	Inj. moulded plastic	Ready made
37	2	Motor mount	Inj. moulded plastic	Ready made
38	1	Motor bulkhead	Inj. moulded plastic	Ready made
39	4	Motor bulkhead adjustor screw	Metal	M3 x 10 mm
40	2	Motor bulkhead mounting screw	Metal	M3 x 16 mm
Wire and rod				
50	2	Tubular wing spar	GRP tube	8 Ø x 6 Ø x 400 mm
51	2	Tubular wing spar	GRP tube	8 Ø x 6 Ø x 100 mm
52	2	Pre-formed elevator pushrod	Metal	0.8 Ø x 510 mm
53	2	Pre-formed rudder pushrod	Metal	0.8 Ø x 510 mm
54	1	Elevator snake outer sleeve	Plastic	3 Ø x 2 Ø x 480 mm
55	1	Rudder snake outer sleeve	Plastic	3 Ø x 2 Ø x 480 mm
56	1	Elevator snake inner sleeve	Plastic	2 Ø x 1 Ø x 500 mm
57	1	Rudder snake inner sleeve	Plastic	2 Ø x 1 Ø x 500 mm
Undercarriage set				
71	2	Lightweight main wheel	Plastic	53 Ø
72	4	Wheel collet	Metal	2.7 Ø x 8 Ø x 5 mm
73	4	Socket-head grubscrew	Metal	M3 x 3 mm
74	1	Undercarriage bracket	Plastic	Ready made
75	1	Undercarriage retainer screw	Metal	M3 x 12 mm
76	1	Tailwheel unit	Metal	1.3 mm Ø
77	1	Lightweight tailwheel	Foam rubber	26 mm Ø
78	2	Tailwheel retainer sleeve	Tubular rivet	2 Ø x 0.2 x 3 mm

The basics of flying - using a model aircraft as an example

Any aircraft - full-size or model - can be controlled around three primary axes: the vertical (yaw) axis, the lateral (pitch) axis and the longitudinal (roll) axis. Operating the elevator produces a change in the model's flight attitude around the lateral axis (nose up or down). External influences such as air turbulence constantly tend to divert the model from its intended flight path, and it is the pilot's job to control the model actively in such a way that it flies where he or she wants it to. The aircraft's altitude is controlled using the power system (motor and propeller). In our models the rotational speed of the propeller is usually controlled proportionally by means of an electronic speed controller. Although applying up-elevator will make the model climb, it is important to understand that it will also make it slow down, i.e. the aircraft will only continue to climb until its airspeed falls to the minimum flying speed (stall speed). Opening the throttle (increasing power) will enable the model to continue climbing, i.e. the power of the motor dictates the maximum climb angle.



The wing section

The wing features a cambered cross-section (known as an airfoil) which affects the air as it passes through it: within a given space of time, the air flowing over the wing has to cover a longer distance than the air flowing under the wing. This generates a low-pressure area on the top surface of the wing which tends to create lift, holding or raising the aircraft in the air. **Fig. A**

The Centre of Gravity

If your Mentor is to fly safely and stably it must balance at the correct point - just like every other aircraft. It is absolutely essential to set the correct CG (balance point) before you fly the model for the first time.

The stated CG position is measured from the root leading edge of the wing (on either side of the fuselage). Support the model on your fingertips at these points, and it should balance level. Even better: use the MPX CG gauge, # 69 3054. **Fig. B**

If necessary, adjust the position of the flight battery until this is the case. If you still cannot set the balance point correctly, add ballast (lead, plasticene, modelling clay) to the nose or tail to correct it. If ballast is needed, fix it very securely. If the model is tail-heavy, the ballast must be fixed in the fuselage nose. If it is nose-heavy, the ballast is fixed at the tail end of the fuselage.

The **longitudinal dihedral** (difference between the wing and tailplane incidence) is also important. Provided that you attach the wing and tailplane to the fuselage exactly as described in these instructions, this parameter will automatically be correct.

If both these settings - centre of gravity and longitudinal dihedral - are correct, you will have no problems flying the model, and the test-flying process will be straightforward. **Fig. C**

Control surfaces, control surface travels

The model will only be able to offer safe, accurate flying characteristics if the control surfaces move freely, deflect in the correct directions, and move to the appropriate angles. The control surface travels stated in the building instructions have been established as a result of practical flight testing, and we strongly recommend that you keep to them - at least initially. You may wish to adjust them later to suit your style of flying, and this is a straightforward procedure.

Transmitter control function arrangements

The transmitter is fitted with two primary sticks which control the servos in the model; the servos in turn move the control surfaces. The arrangement of the control functions shown here corresponds to Mode A, but other stick modes are possible.

The transmitter is used to operate the control surfaces as follows:

The rudder (left / right)	**Fig. D**
The elevator (up / down)	**Fig. E**
The ailerons (left / right)	**Fig. F**
The throttle (motor off / on)	**Fig. G**

The throttle (motor control) stick must stay in the set position by itself, i.e. it must not be self-centring. For this reason the throttle stick is usually set up with a ratchet. If your transmitter is not set up in this way, please read the operating instructions supplied with the RC set to find out how to set up the throttle ratchet.

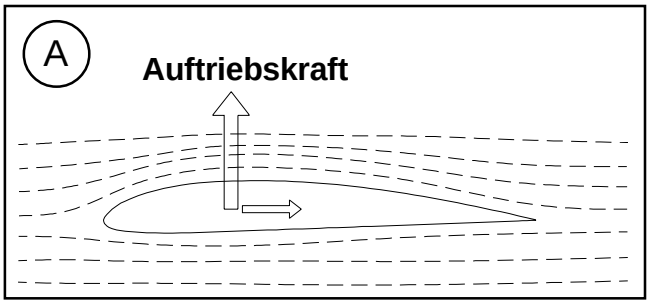
Grundlagen am Beispiel eines Flugmodells

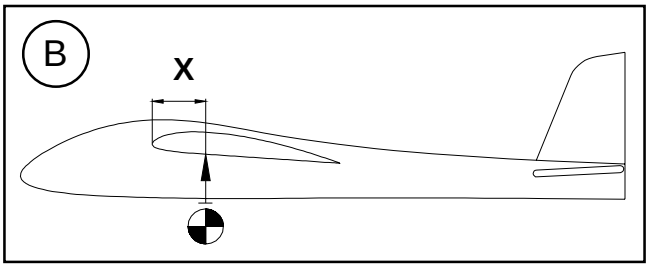
Basic information relating to model aircraft

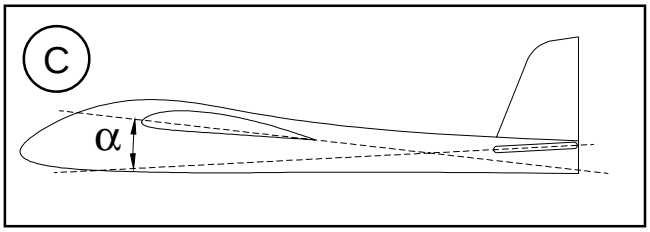
Bases du pilotage d'un modèle réduit

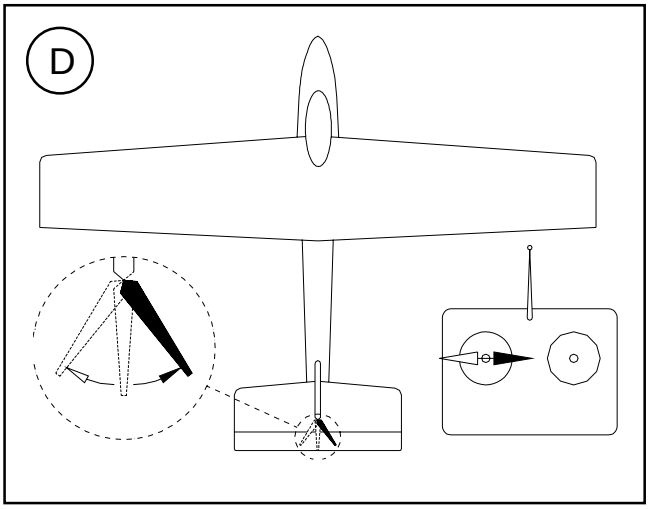
ozioni fondamentali

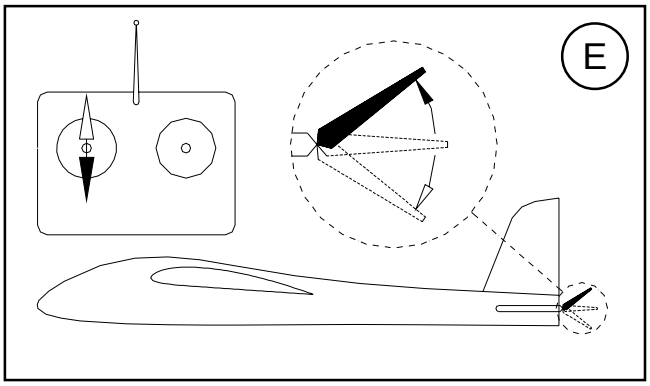
Principios básicos tomando como ejemplo un avión

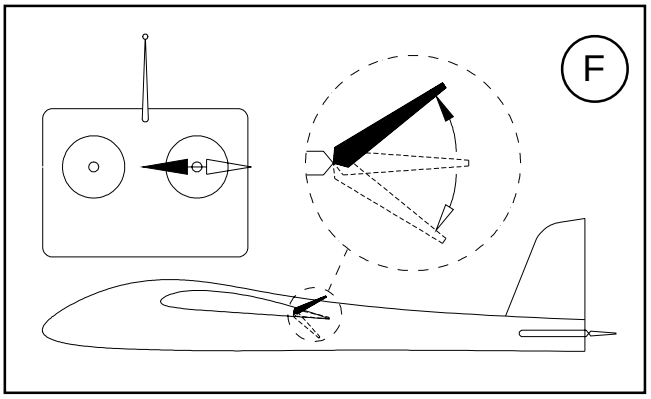


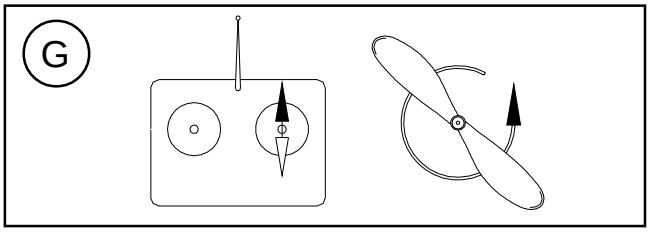










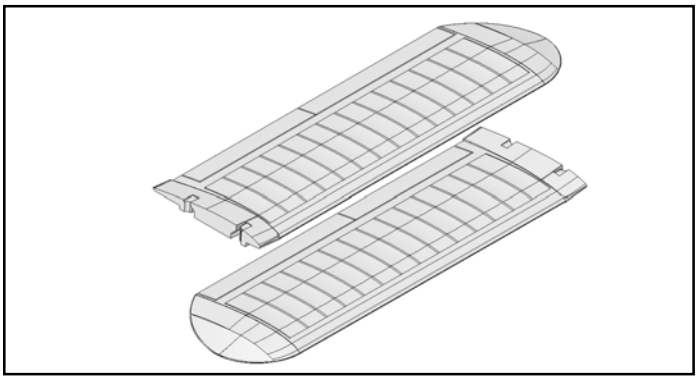


Ersatzteile
Replacement parts
Pièces de rechanges
Parti di ricambio
Repuestos

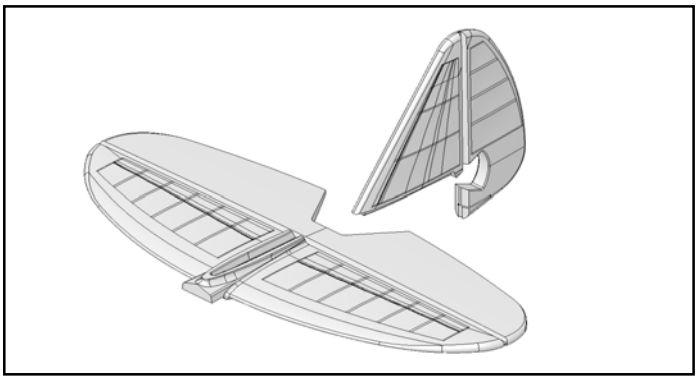
EASYCUB

(bitte bei Ihrem Fachhändler bestellen)
(please order from your model shop)
(S.V.P. à ne commander que chez votre revendeur)
(da ordinare presso il rivenditore)
(por favor, diríjase a su distribuidor)

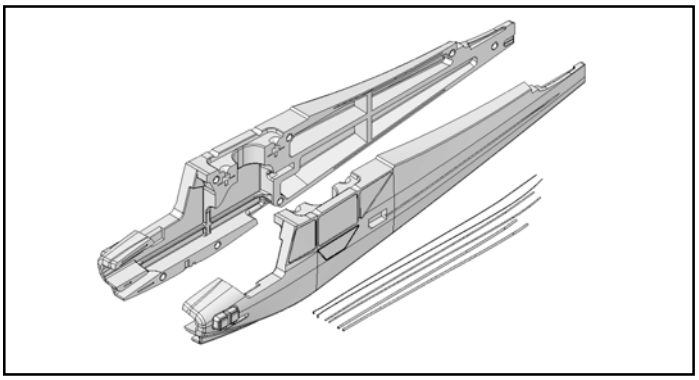
 # 22 4139
Tragflächen
Wing panels
Ailes
Ali
Alas



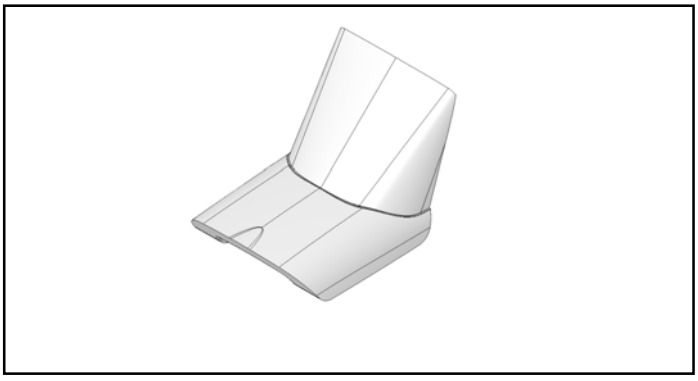
 # 22 4140
Leitwerkssatz
Tail set
Kit de stabilisateurs
Piani di coda
Kit de empenajes



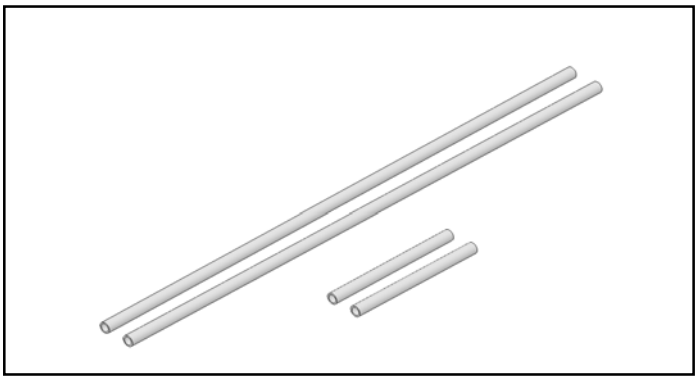
 # 22 4137
Rumpfhälften + Bowdenzüge
Fuselage shells + snakes
Moitié de fuselage + tringlerie
Semigusci fusoliera + bowden
Fuselaje + transmisiones bowden



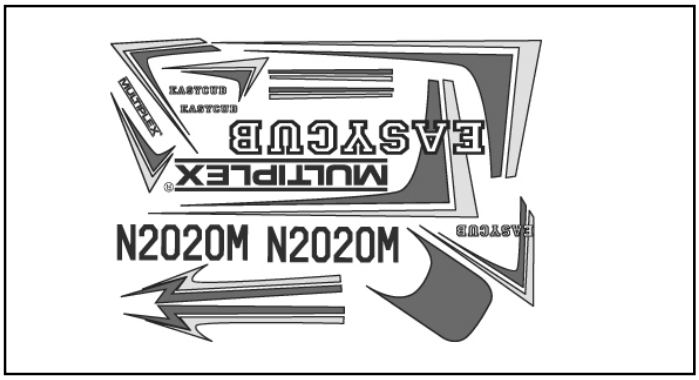
 # 22 4138
Kabinenhaube
Canopy
Verrière
Capottina
Cabina



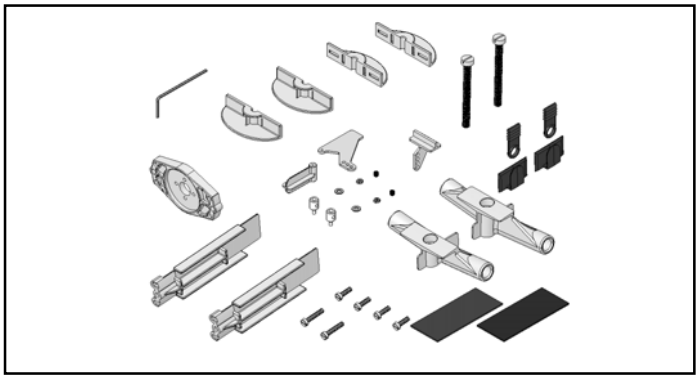
 # 72 3130
CFK Holmrohr
CFRP Wing joiner
Tube en fibre de carbo
tubo carbonio
Tubo Fibra de vidrio



 # 72 4519
Dekorbogen
Decal sheet
Planche de décoration
Decals
Lámina decorativa



 # 22 4141
Kleinteilesatz
Small items set
Petit nécessaire
Minuteria
Piezas pequeñas



 # 22 4142
Hauptfahrwerk
Main undercarriage
Train d'atterrissage principal
carrello principale
Tren principal